Progress Report for Aquatic Ecosystem Enhancement Work Plan
February 1, 2000

Introduction

This report outlines the progress made to date for the Aquatic Ecosystem Enhancement Work Plan. This work plan, which can be reviewed in its entirety on a separate page on this web site, is being carried out by EPA, COE, USF&WS, OSM, WVDEP, NETL, the National Mined Land Reclamation Center, the West Virginia Surface Mining & Reclamation Association, the Canaan Valley Institute, and various coal companies in West Virginia.

The purpose of this effort is to:

- Assess mining and reclamation practices to show how mining operations might be carried out in a way that minimizes adverse impacts to streams and other environmental resources and to local communities.

- Clarify economic and technical constraints and benefits.

- Help citizens clarify choices by showing whether there are affordable ways to enhance existing mining, reclamation, mitigation processes and/or procedures.

- Identify data needs to improve environmental evaluation and design of mining projects to protect the environment.

For further information, you may wish to contact Gary Bryant of USEPA at 304/234-0230.

Progress to Date

A planning meeting involving coal industry, environmental, and government representatives was held September 15, 1999 which outlined plans for a symposium or work shop on stream restoration and reclamation practices at valley fills and mountaintop mines. A panel of experts was assembled and they toured a group of four mine sites in early December 1999. The National Mined Land Reclamation Center, in cooperation with the West Virginia Mining and Reclamation Association and the West Virginia Coal Association, reviewed stream restoration activities on valley fill sites and recommended that the following sites be visited by the team of experts:

- Elk Run Mine of Massey Coal
- Samples Mine of Catenary Coal
- Pen Coal
- Hobet 21 Mine of Arch Coal

Over 130 people attended the Aquatic Ecosystem Enhancement Symposium held on January 12, 2000 at the Holiday Inn, Charleston House, Charleston, WV. The West Virginia Mining & Reclamation Association provided the meeting rooms, and the facilitator for the Symposium was Dr. Paul Ziemkiewicz, Director of the National Mined Land Reclamation Center. The National Energy Technology Laboratory (NETL) staff coordinated publicity, registration, and technical support for the Symposium. The agenda for the Symposium is included as an attachment below. Proceedings of the Symposium are being prepared and should be distributed to attendees by March or April, 2000.

AQUATIC ECOSYSTEM ENHANCEMENT AT MOUNTAINTOP MINING SITES

January 12, 2000
Holiday Inn Charleston House

Symposium Agenda

9:00	Welcome and Introductions- Paul Ziemkiewicz
9:15	Overview of First Order Watersheds - Bruce Wallace
9:45	Mine Sites Visited by the Panel Members - Courtney Black
10:00	Catenary Coal's Success Restoring Aquatic Habitat - Peter Lawson
10:15	***BREAK***
10:30	Panel Introduction - Paul Ziemkiewicz
10:45	Land Form - John Morgan & Horst Schor
11:45	***LUNCH*** *(on your own)*
12:45	Aquatic Resources - Rocky Powell, Randy Maggard, & Bruce Wallace
1:45	Vegetation - Steven Handel & Ben Faulkner
2:45	***BREAK***
3:00	Breakout sessions by theme (Grand Ballroom) to identify benefits & barriers to panelist suggestions. Regulatory experts from WVDEP & OSM will be assigned to each group.
4:00	Reconvene (Lobby Ballroom) to share major points for each theme - Theme Facilitators
4:45	Symposium Summary - Paul Ziemkiewicz
5:00	Adjourn

Speaker Biographies

(in order of appearance)

Paul F. Ziemkiewicz

Paul Ziemkiewicz is a native of Pittsburgh, PA. He received a B.S. and M.S. from Utah State University in biology and range ecology, respectively. He then received a Ph.D from the University of British Columbia in Forest Ecology.

After graduating from UBC in 1978, he joined the Alberta Government's Department of Energy. There he directed its reclamation research program in coal and oil sand mining. He also served on Alberta's regulatory review committee and served as the research manager of the Province's coal research program. In 1988, he came to West Virginia University to serve as the Director of the National Mine Land Reclamation Center and the West Virginia Water Resources Research Institute.

He presently serves on a number of federal, state and industry advisory panels on environmental remediation. Dr. Ziemkiewicz has over 70 publications on the topics of mine land reclamation, acid mine drainage, and coal ash application in mines.

J. Bruce Wallace

J. Bruce Wallace received his B.S. from Clemson University, and M.S. and Ph.D. from Virginia Tech. He is currently Professor of Entomology and Ecology, University of Georgia, Athens, Georgia, where he teaches courses in stream ecology, aquatic entomology, and immature insects. He has served as major professor of some 38-graduate students at Georgia. Dr. Wallace is author, or co-author, of some 150 scientific papers, including book chapters, concerned with various aspects of stream ecology, or aquatic entomology.

Much of his research during the past 25 years has been conducted on southern Appalachian streams at the Coweeta Hydrologic Laboratory (U.S. Forest Service) in western North Carolina and supported primarily by the National Science Foundation. His primary research areas include: linkages between streams and terrestrial ecosystems; role of aquatic invertebrates in stream processes; effects of disturbance and recovery of streams from disturbance; secondary production and aquatic food webs and energy flow; and, organic matter dynamics in headwater streams.

Dr. Wallace is a past president (1991-1992) of the North American Benthological Society. He was the recipient of the 1999 Award of Excellence in Benthic Science from the North American Benthological Society.

D. Courtney Black

D. Courtney Black is the Program Manager for the National Mine Land Reclamation Center at West Virginia University. Mr. Black is a scientist with 6 years of research and project management experience. His primary focus has been in the fields of coal combustion product utilization and field scale acid mine drainage treatment. Mr. Black also serves as the Director of West Virginia University's National Environmental Education and Training Center. NEETC's primary focus is to ensure that health and safety concerns are incorporated into new environmental remediation technologies.

Peter Lawson

A native of County Durham, England, Peter Lawson received his undergraduate degree in Mining Engineering in 1978 from New Mexico Tech. In 1986, while maintaining full time employment in the mining industry, he received his MBA from Ashland University, Ohio. Mr. Lawson has more than 20 years of industry experience, the majority of which has been in surface coal mining in Appalachia. During his career he has worked on projects in western Canada, Russia and Mongolia, as well as having performed work in virtually every major coal-producing basin in the United States. Arch Coal, Inc. has employed Mr. Lawson for 5 years where he is currently President and General Manager of Catenary Coal Company. Catenary Coal Company has received numerous awards for the Samples Mine in Kanawha County where the company's achievements and approach to reclamation have been recognized at both state and national levels. Catenary Coal Company is twice winner of the David C. Callaghan award, winner of the IMCC National reclamation award, and winner of the West Virginia Ducks Unlimited Wetlands award.

John S.L. Morgan

John S.L. Morgan is an environmental mining consultant with extensive experience in both surface and underground mining, for the extraction of metalliferous ores, coal and industrial minerals. He has a specific emphasis on the environmental effects of mining and mine reclamation. He also provides detailed technical expertise in the analysis of mine subsidence prediction and mitigation, acid mine drainage and mine planning.

Mr. Morgan founded Morgan Worldwide Mining Consultants, Inc. in 1995. Previously, he had established Morgan Mining & Environmental Consultants, Ltd. in 1990 with a staff of 18 people and built it into a $2 million per annum operation with 27 employees. The International Mining Consultants Group acquired the company in 1992. Mr. Morgan then served as the Executive Vice President of Weir International Mining Consultants until 1995 when he left to form Morgan Worldwide Mining Consultants Inc.

Mr. Morgan has been the project manager for a number of mine technical reviews, for a significant number of subsidence investigations, and for environmental compliance and liability analysis reviews for both operating and abandoned mining operations. He is actively involved in projects in all regions of the United States, and has worked in Russia, Indonesia, Ukraine, Poland, Bulgaria, Peru, Argentina and Trinidad. During his career, Mr. Morgan has also worked in rock mechanics in South Africa, and as a planning engineer for open cast coal mining in Britain.

Horst J.Schor

Horst J. Schor's educational background includes degrees in Civil Engineering and Geography and graduate course work in Environmental Studies.

His professional career spans more than 25 years during which he managed the development of large scale hillside planned communities in Southern California and other projects. Since 1991, he has been an independent consultant serving the private and public sectors on issues of land development, landform restoration and mining reclamation with particular emphasis on geomorphological restoration.

Rocky Powell

Rocky Powell is the founder and principal of Clear Creeks Consulting, an environmental firm specializing in stream and watershed assessment, management, and restoration. Mr. Powell has over 25 years in the environmental field with experiences that include wildlife and fisheries research, water quality monitoring, natural resources protection, watershed management, stream assessment and restoration, and teaching. Providing environmental consulting services in Maryland, Virginia, West Virginia, North Carolina, Pennsylvania, New York, Vermont and Texas, Mr. Powell has: 1) conducted hundreds of geomorphic watershed and stream assessments; 2) developed watershed management plans; and 3) designed,

permitted, provided construction supervision and post-construction monitoring for numerous wetland mitigation and stream restoration projects.

An instructor in the Johns Hopkins University School of Continuing Studies from 1992-1999, he taught graduate and undergraduate courses on stream ecology and stream related issues. He has presented numerous workshops and short courses on stream dynamics, stream protection, assessment, management, and restoration throughout the United States and Canada.

Randy Maggard

Randy Maggard is an Environmental Specialist and Surface Mine Engineer with Pen Coal Corporation. He has degrees in Chemistry and Civil Engineering and has been employed with Pen Coal for the last 14 years. He has been active in environmental affairs related to coal mining and is a member of the West Virginia Surface Mine Drainage Task Force. Pen Coal has received numerous reclamation awards for their operations in West Virginia and Kentucky. Pen Coal has been conducting extensive biological monitoring for the last five years on their Kiah Creek operation located in Wayne, Lincoln, and Mingo counties in southern West Virginia.

Steven N. Handel

Steven N. Handel is a restoration ecologist interested in the establishment of native communities on degraded lands. He serves as professor of ecology and evolution at Rutgers University in New Jersey, where he teaches and does research in the fields of plant ecology, plant-animal interactions, and restoration. Dr. Handel is Director of the new Center for Restoration Ecology at Rutgers. He also has been a biology professor and Director of the Botanical Garden at Yale University. He serves as an editor for the journal Restoration Ecology, and was elected chair of the Plant Ecology Section of the Ecological Society of America. Trained at Cornell University, he and his students have done fieldwork throughout the east coast. As a consultant, he has advised on restoration design on degraded sites such as urban landfills, urban parks, sand mines, and national parks affected by invasive species.

Ben B. Faulkner

Ben B. Faulkner served as a surface mine reclamation inspector for the West Virginia Department of Natural Resources, dealing with inspection, enforcement, and permit review in many southern counties. He has served as an industry biologist and has coordinated reclamation and environmental affairs. He has been a research associate at West Virginia University in the fields of mine reclamation and mine drainage. As a private consultant, he has conducted training seminars for inspectors and operators in AMD prevention, and chemical and passive treatment.

As sole proprietor of Bratton Farm, he has provided professional consulting services to several international corporations and agencies. He has prepared surface mine, deep mine, and other permits and provided environmental management services including designing, installing, and monitoring numerous wetlands, anoxic limestone drains and other passive treatment systems for WVDEP, WVU, and industry. He has performed numerous benthic studies for industry and WVDEP. He serves as a special consultant to WVDEP for acid mine drainage issues.